

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 – 8 (cancelled)

Claim 8 9 (previously presented): An apparatus which may be used for stirring and injecting a gas into a liquid located in a container, wherein said apparatus comprises:

- a) a reactor, wherein said reactor contains a liquid;
- b) a drive device located above said reactor, wherein:
 - 1) said drive device comprises a vertical output shaft;
 - 2) said output shaft comprises at least one axial-flow moving assembly; and
 - 3) said axial-flow moving assembly is:
 - i) located at a lower end of said output shaft; and
 - ii) substantially submerged in said fluid;
- c) a cylinder located around said output shaft, wherein:
 - 1) said cylinder comprises both an upper and a lower cylinder end; and
 - 2) said upper cylinder end:
 - i) is substantially sealed to said drive device; and
 - ii) comprises an opening for injecting a gas into an annular gap between said output shaft and said cylinder;
- d) a self-priming impeller, wherein:
 - 1) said impeller is submerged in said liquid and is capable of being driven by said output shaft; and
 - 2) said impeller comprises:
 - i) an upper disk, wherein:
 - aa) said upper disk is perforated with a central hole;
 - bb) the edge of said central hole and said lower cylinder end form an at least partially annular space; and
 - cc) said liquid is sucked into said impeller through said annular space;
 - ii) a lower disk, wherein the surface area of said lower disk is less than the surface area of said upper disk; and

- iii) a set of radial vanes located between, and attached to, said upper and said lower disks; and
- e) a direction means for directing a gas/liquid dispersion expelled radially from said impeller toward said axial-flow moving assembly.

Claim 9 10 (currently amended): The apparatus of claim 8 9, wherein the diameter of said lower disk is less than the diameter of said upper disk.

Claim 40 11 (currently amended): The apparatus of claim 9 10, wherein said diameter of said lower disk is greater than or equal to the diameter of said partially annular space.

Claim 44 12 (currently amended): The apparatus of claim 8 9, wherein said lower disk is at least partially cut out.

Claim 42 13 (currently amended): The device of claim 44 12, wherein said cut out is in the form of an annulus.

Claim 43 14 (currently amended): The apparatus of claim 8 9, wherein said axial-flow moving assembly comprises a propeller.

Claim 44 15 (currently amended): The apparatus of claim 8 9, wherein:

- a) said directing means comprise a baffle-forming annular casing located around said impeller;
- b) said annular casing directs a stream of said dispersion, radially from said impeller, towards said axial-flow moving assembly; and
- c) said annular casing is perforated with at least two central openings, wherein said openings are coaxial with said output shaft.

Claim 45 16 (currently amended): The apparatus of claim 8 9, wherein said axial-flow moving assembly is the final assembly located on said output shaft.